NEWSLINE

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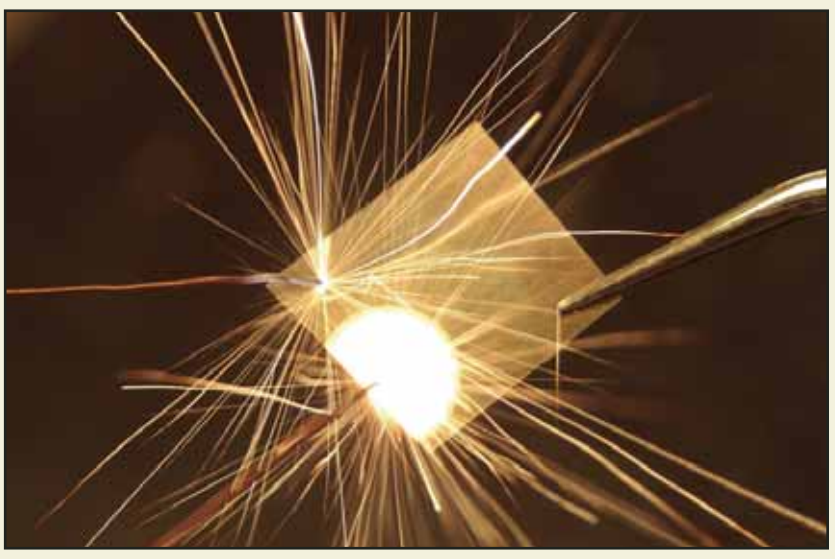
Lab wins four R&D 100 awards

By Stephen Wampler
NEWSLINE STAFF WRITER

Laboratory researchers have garnered four awards for developing advanced technologies with commercial potential.

Three teams of LLNL scientists and an individual Livermore scientist who worked with a former Lab researcher have won plaques from the trade journal *R&D Magazine* for being among the top 100 industrial innovations worldwide for 2004. They worked with two industrial collaborators.



MAXIMILIAN FRANZ COURTESY OF REACTIVE NANOTECHNOLOGIES (RNT)

Shown is a Reactive NanoTechnologies (RNT) NanoFoil containing thousands of alternating nanoscale layers of nickel and aluminum. With foils formed in this manner, an electrical pulse applied to the foil will initiate a chemical reaction producing high temperatures. RNT has licensed technology from LLNL. The two organizations, plus Johns Hopkins University, have jointly won an R&D 100 award.

This year's R&D 100 awards, often called the "Oscars of invention," will be presented Oct. 20 during a black-tie dinner at the Navy Pier Convention Center in Chicago.

"We are pleased by the Laboratory's continued success in producing leading innovations that benefit the nation and U.S. industry," said Cherry Murray, LLNL's deputy director for Science and Technology. "These technologies reflect the Laboratory's tradition of multidisciplinary teams working together to solve important national problems."

With this year's four R&D 100 awards, the

See **R&D 100,** *page 4*

People Information Program rolls out 'single source of truth' for Laboratory employee data

Editor's note: This is the first in a series of articles on the Lab's new People Information Program. Over the next two years, several articles on the project will appear in Newsline *and* NewsOnLine. *Today's article introduces the program.*

An ambitious new program to provide "a single source of truth" for employee data is under way. The People Information Program (PIP) is a Labwide effort to better integrate data across multiple business platforms, such as Human Resources/payroll, finance and budgets.

PIP will create a central repository of employee data that will provide more accurate, timely and useful information concerning all Lab employees, and at the same time, enable the reduction of costs associated with the current practice of maintaining multiple people systems.

"One of our primary objectives is creating a data dictionary of our people," said Jim Lopez, deputy associate director for Administration and Human Resources and the PIP leader. "Through this program we will have consistent categorization for our employees.

See **PIP,** *page 3*

Web and business systems to shut down this weekend for power system upgrade

The first phase of the AIS Computer Center Power Improvement project — the installation of an automatic transfer switch — will be completed this weekend (July 9-10).

All AIS business applications (such as LITE, EOS, ECMS, LHire, etc.) and the LLNL internal Web (the MyLLNL portal and centrally hosted Web sites) will be unavailable from 6 p.m. today (Friday) until approximately 8 a.m. Monday (July 11). The external LLNL Web presence will be available during this work period. The installation of a backup generator — the final phase of the project — will occur on a future date and should not require a disruption in services.

Because of potential power cycling impacts to hardware equipment, AIS cannot guarantee full service recovery by 8 a.m. Monday. Organizations with time-sensitive processing requirements may want to consider schedule changes to ensure critical deadlines are met.

AIS and AISCC tenant support staff will be working through the night restoring services. For questions or concerns, notify the ITS Customer Support Center (CSC) at 3-0586.

National security visit

BOB HIRSCHFELD/NEWSLINE

From left: Director Michael Anastasio, Rep. Ellen Tauscher, Gen. James Cartwright and Lab Executive Officer Ron Cochran. Gen. Cartwright, commander of the United States Strategic Command, came to Livermore for discussions related to NNSA weapons programs. Rep. Tauscher joined Cartwright and Lab managers for updates on Laboratory national security activities. She also met with summer student interns supporting homeland security research.

LAB COMMUNITY NEWS

Weekly Calendar

Technical Meeting Calendar, page 3

Saturday 23

Volunteers are needed for the "All LLNL" day with **East Bay Habitat for Humanity** on July 23 when Lab employees will help build 22 homes in Livermore near East Avenue and Hayes Street. The workday is from 8:30 a.m. to 4 p.m. All skill levels are welcome. This is the first in the "LLNL at HOME in our Community," series of activities sponsored by the HOME Campaign Committee from July through November to spotlight the work done by agencies registered with HOME (Helping Others More Effectively). The 2005 HOME Campaign is managed by Defense and Nuclear Technologies (DNT) employees.

To participate in the "All LLNL" day, or for more information, contact Dawn DaRonco at 2-4526.

Up & Coming

The **Aurora teams** are seeking your input for the Lab's future. Initiatives that will strategically position the Lab for the year 2025 will be discussed in detail when the Aurora committee members gather for a special three-day offsite meeting, July 26-28.

Employees still may submit their ideas to the Aurora committees, but time is running out. If you have a question or suggestion for any or all of the Aurora teams — Missions & Sponsors, Science & Technology, Operations & Infrasturcture, Partnerships & Relationships or Workforce & Work Environment, see the portal at https://www-r.llnl.gov/. Click on the Aurora logo on the right hand side of the page.

No classified ads this week; advertisements will reappear in next Friday's Newsline issue

Due to space restrictions in this week's *Newsline*, the classified ads are available only on the Web, located at https://www-ais.llnl.gov/newsline/ads/ or http:// www.llnl.gov/pao/employee/. Ads must be submitted by close of business Tuesdays in order to appear that week in *Newsline* or on the Web. Because of the July 4 holiday, classified ads will not appear in print until the Friday, July 15 edition of *Newsline*.

Calling all Lab book authors

Have you written a book recently? Fiction, nonfiction, general interest or technical, let us know about your book and we'll profile it in *Newsline*. Contact Karen Kline (kline1@llnl.gov, 3-4348) with your contributions.

RETIREES' CORNER

Besides traveling, **Bill Fritts** (Nondestructive Evaluation and Hazardous Waste, 1998) and his wife, Karen, are busy: digitally documenting his family history, scanning photographs dating back to 1906 and creating a slide show on DVD. Bill transferred an 8 mm movie of his parent's 1930 wedding to DVD. They created photo books for their three grandchildren and had them printed and bound by Apple Computer. He also has a family Website. He says he got hooked on the digital life at the Lab. Karen teaches speech communication part-time at Palomar Community College in San Marcos. She really enjoys teaching, but not necessarily the commute two days a week. (e-mail address: wfritts@adelphia.net)

Gus (Engineering Directorate, 1993) and **Jane** (Mechanical Engineer, 1993) **Olson,** have been keeping busy with local California trips. They visited friends in Auburn for a day, and then attended Jane's granddaughter's high school graduation. The next day, they finally found Railroad Flats near Jackson where Jane's stepson, wife and grandson were participating in a Cowboy Action Shooting match. They stopped at the Jackson Rancheria on the way home. Later in the month, they went to Cameron Park to visit **Effie (Willbanks) Hurley** (Jim Hurley's widow, Weapons, 1979) to celebrate her 87th birthday. That afternoon they visited three wineries in the Placerville area.

Garith (Mechanical Engineering, 2002) and **Amy** (Laboratory Services, 2002) **Helm** were in the Bay Area for about a week visiting family and friends. They saw many friends from the Lab and even attended the fair preview party before going on to Oregon to visit more family. They are thoroughly enjoying their new home in LaQuinta: e-mail: helm2x@earthlink.net.

There are no **Travel Group Meetings** for the remainder of this year. They will resume again in January 2006. Thanks to **Margie O'Dell** for another year of fine shows.

The **retiree picnic** was well attended on June 15. There were approximately 97 people in attendance.

The next **retiree luncheon** will be held at noon Wednesday, July 20, at the Elks Lodge in Livermore, 940 Larkspur Drive. (Reservations: www.llnl retirees.org). The speaker will be **Eileen Vergino** and her topic is: "Seismic Cooperation and Caucasus in Central Asia (all of the "stan" countries)."

Correction: In last month's Retirees' Corner there was an error. **Bill and Sue Simecka** have a new grandson, not granddaughter.

Many retirees must be traveling because we got little input this month. This column may sometimes appear to be a travelogue. But please note, we also are interested in a broad range of things that retirees do with their time, such as hobbies, volunteering, gardening, quilting or other activities. Send input to **Jane or Gus Olson:** AugustO@aol.com or JaneRubert@aol.com; (925) 443-4349; 493 Joyce Street, Livermore, CA 94550.

IN MEMORIAM

Armando Alonso

Armando E. Alonso, a 30-year resident of Livermore, died June 17. He was 73.

Alonso was born on March 18, 1932, in Mexico City. He came to the United States in 1950 and did everything in his power for three years to become a citizen. In 1953, he enlisted in the U.S. Army and served until he was honorably discharged in 1961.

He was employed by Mexicana Airlines after his military service for 10 years. In 1971, he moved to Livermore and was employed by the Laboratory and the Pleasanton Unified School District as head of the maintenance department before retiring in 1986.

Alonso enjoyed working with his hands so much that he started his own business as a handyman, focused on helping seniors. In his spare time, he enjoyed gardening, cooking and spending time with his grandchildren. He was a member of St. Michael's Church.

He is survived by his wife of 48 years, Paula Alonso of Auburn; children, Sarah Murphy of Colfax, Martin Alonso of Livermore, Michael Alonso and his wife, Stacey, of Livermore, Lupi Alonso of Benicia, and Julia Quinlan and her husband, Shawn, of Livermore; seven grandchildren and two great-grandchildren.

Services will be held today (July 8) at 3 p.m. at St. Michael's Church, 458 Maple St., Livermore.

Herschel "Andy" Anderson

Herschel Anderson died July 2 at his home in Dublin. He was 78.

Anderson worked at the Lab for 40 years in the Security Departmen before retiring in 2002.

He is survived by his wife of 39 years, Lois; daughters, Marlene Kinley and Cheryl Canada; grandchildren Jason and Christopher Canada, Jordan and Britten Kinley and Taylor and Mikenzie Wetzel, son-in-law Dave Kinley and daughter-in-law Teri Wetzel; son Dave Anderson of Duluth and brother Donald Anderson of Denver.

A memorial service to celebrate his life will be held at 2 p.m. Sunday, July 10, at Crosswinds Church, 6444 Sierra Court, Dublin. In lieu of flowers, the family requests donations be made to Vitas Hospice, http://www. vitascharity fund.org/.

Newsline

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AROUND THE LAB

PIP

Continued from page 1

We will eliminate data redundancies and we will have a standardized method for recording all people information."

Currently, each directorate or program has its own way of recording its "people data," resulting in inconsistencies across the board. For example, an employee identified in one program as a supervisor may not be considered a supervisor within another program's database. The People Information Program will consolidate that data, providing consistent definitions.

"Through PIP we will establish better business practices," Lopez said.

PIP kicked off in March and is expected to take approximately two years to implement. During the first phase, scheduled for completion in April 2006, the team will establish a central repository of data concerning people, migrate historical data from the current PeopleSoft to Oracle software, improve workforce planning and implement four modules: core human resources, payroll, benefits and self service.

The second release, scheduled for April 2007, will include improved business intelligence for managers, modules for recruitment and hiring and skills and training, and the beginning of the migration of other operational systems, such as LHire. Along with the new system, the PIP implementation will replace many "manual cumbersome administrative processes with processes that are best in class," Lopez said.

PIP can be traced back to former Deputy Director Glenn Mara, who began looking for ways to consolidate and integrate people information shortly after being named to the director's office, more than two years ago.

"We are getting more and more requests from our sponsors regarding our people information," Lopez explained. Through proper categorization of people data, Lopez said the Lab will be better positioned to meet its operational, security and safety requirements.

PIP includes an implementation team of 35 employees from across the Lab and Oracle consultants who work daily on the program. In addition, a Governance Committee has been established; members include associate directors Steve Patterson, Bruce Goodwin, Dave Leary, Jan Tulk and Bill Bookless, along with CFO Linda Rakow and CIO Ken Neves.

For more information on PIP, see the Website at http://www-r.llnl.gov/pip/index.html.

Summer Student Calendar

Seminars, panels and other activities are now in full swing for summer student employees. Go to the Student Bulletin Board at http://education.llnl.gov/sbb/for details and to register for events.

Tuesday 12

Seminar — "Power Presentations," by Gary Kumfert, LLNL/CASC. 2:30 p.m., Bldg. 453, room 1001, Armadillo Auditorium. Contact: Tiffany Ashworth, 4-3491.

Wednesday 13

Seminar — "Energy Issues from a Global Perspective," by Gunnar Tamm, U.S. Military Academy at West Point. 2 p.m., Bldg. 482 auditorium, room 1103. Contact: Maureen Lewis, 2-2626.

DHS Seminar — "Rad/Nuc Countermeasures at LLNL," by Christine Hartmann-Siantar, Chemistry and Materials Science Directorate. Noon-2 p.m., Bldg. 132S, room 1755. Contact: Barry Gooldman, 2-5177.

Workshop — "How to Design Effective Posters," by Marsha McInnis, Mitch Alvarez and Kerwin Falls, University Relations Program. 10 a.m., Bldg. 219, room 163. Contact: Kerwin Falls, 2-6098.

Thursday 14

Panel — "Women in Science - Career Challenges." 10:30 a.m. - noon, Bldg. 543 auditorium. Lunch to follow. Contact: Karen Lema-Crowe, 2-6233.

MARA Tour — National Atmospheric Release Advisory Center (NARAC). By Ron Baskett, Energy and Environment Directorate. 10 a.m., Bldg. 170, room 1018. Contact: Barry Goldman, 2-5177.

HEDP Seminar — "Experimental Science at the Extremes: a Survey of HED Laboratory Astrophysics," by Bruce Remington. 1:30 p.m., Bldg. 219, room 163. Contact: Vickie Stone McFadden, 2-5308.

Please send your summer student calendar items to lucchetti1@llnl.gov

Technical Meeting Calendar

Friday 8

LIVERMORE PROJECTS COMMITTEE
"Requirements and Design for the Reliable Replacement Warhead," by Scott Faas, Sandia National Laboratories, Livermore and "Reliable Replacement Warhead Candidate," by Juliana Hsu, LLNL. 8:45 a.m., Bldg. 132 auditorium. All attendees must have an SP access card or obtain special approval to attend any meeting. For LLNL, contact Barbara Sherohman, 3-6379, with any SP access questions. For SNL, contact Ann Stayton, 925-294-2582, with any SP access questions. Property protection area. No temporary building access for foreign nationals. Contact: Scott Couture, 3-4100, or Frances Mendieta, 3-7825.

Monday 11

CHEMISTY AND MATERIALS SCIENCE
"Bacillus Spore Characterization Studies with Bio Aerosol Mass Spectrometry (BAMS)," by David Fergenson, Aerosol Sciences Group. 2 p.m., Bldg. 151, room 1209, Stevenson Room. Property protection area. Foreign national temporary escorted building access procedures apply. Contact: Ted Tarasow, 3-7241.

Wednesday 13

PHYSICS AND ADVANCED TECHNOLOGIES/N DIVISION
"The Quest for a Nanometer-Resolution Beam Position Monitor," by Sean Walston. 1:30 p.m., Bldg. 211, room 227. Foreign nationals may attend if appropriate security plan is on file, which includes Bldg. 211. Property protection area. Foreign national temporary escorted building access procedures apply. Contact: Sean Walston, 3-7364, or Pat Smith, 2-8210.

Thursday 14

ATMOSPHERIC SCIENCE DIVISION
"Data Mining in this Nonlinear and Nonstationary World: What We Should Look For, and How?" by Norden Huang, NASA Goddard Space Flight Center. 11 a.m., Bldg. 170, room 1091. Contact: Sharon Mickels, 3-9279.

ENGINEERING SEMINAR SERIES
"Global Energy Security, Renewable Energy, and Roadmap to a Hydrogen Economy — Geothermal Energy," by Gunnar Tamm, U.S. Military Academy. 1:30 p.m., Bldg. 543, room 1258. Common use facility. Foreign nationals may attend. Contact: Helen Magann, 2-5229.

HAZARDS CONTROL
"Coherent Demonstration/Seminar," by Coherent Lasers. 9 a.m.-3 p.m., Trailer 2627, room 1020. Common use facility. Foreign nationals may attend. Contact: Mark Ludwig, 2-6964.

The deadline for the next Technical Meeting Calendar is noon Wednesday.
Please submit your meetings via the new Technical Meeting Calendar form on the Web, located at http://wwwr.llnl.gov/tmc/index.html

'Not in our town'

Producers of the public television documentary, "Not in Our Town: Northern California," Patrice O'Neill (center) and Kelly Whalen (right) along with Pamela Calvert, the "Not in Our Town" campaign director (left), held a Q&A session following a special advanced screening of the film for Lab employees last month.

The documentary examines five Northern California communities and their response to hate crimes over the past six years. The preview was co-sponsored by the WorkLife Center, the Laboratory Gay Bisexual Transgender Association, Amigos Unidos Hispanic Networking Group and the Association of Black Laboratory Employees.

Susane Head, diversity and worklife program manager, said feedback showed that employees were moved by the film. The WorkLife Center plans to continue the dialogue that began following the film through smaller showings and discussion groups across the Laboratory.

JACQUELINE MCBRIDE/NEWSLINE

R&D 100

Continued from page 1

Laboratory has captured a total of 106 such awards since 1978. This year, Department of Energy (DOE) labs won a total of 29 R&D 100 awards.

"These awards demonstrate that DOE scientists and researchers are hard at work developing the technologies of the future," said Secretary of Energy Samuel Bodman. "In the past, breakthroughs like these have played an important role in both our economic and national security."

Other DOE laboratories winning R&D 100 awards this year were: Argonne National Laboratory, Sandia National Laboratories and Los Alamos National Laboratory, with four awards each; Lawrence Berkeley National Laboratory and Oak Ridge National Laboratory, with three awards each; the National Renewable Energy Laboratory, with two awards; and Brookhaven National Laboratory, Idaho National Laboratory, Pacific Northwest National Laboratory, the Thomas Jefferson National Accelerator Laboratory and Ames Laboratory at Iowa State University, with one award each.

Protecting against bioterrorism

For the third straight year, LLNL researchers have won an R&D 100 award for developing advanced technologies to rapidly detect the airborne release of biological threat agents.

This year's winner, the Biological Aerosol Mass Spectrometry (BAMS) system, is an instrument about the size of three podiums that can analyze individual aerosol particles in real time and at high rates to almost instantly identify the presence and concentration of harmful biological particles in air samples.

Using a laser to peel cells apart and a mass spectrometer to identify the chemicals inside, BAMS can identify airborne pathogens at the single-cell level in about 100 milliseconds. Combining an understanding of laser-particle interactions, the biochemistry of bacteria and mass spectrometry analysis, BAMS is a prototype system that can identify pathogens and differentiate between harmful anthrax spores and benign agents.

BAMS is designed for operation in office buildings that could be targets for a terrorist attack with a biological agent such as anthrax or at ports of entry such as airports or train stations to monitor for potential epidemic diseases. Future biomedical applications could include rapid detection of respiratory diseases such as tuberculosis and SARS.

The Livermore employees who developed BAMS come from three directorates — Physics and Advanced Technologies, Chemistry and Materials Science and Engineering. They are: Jim Birch, Keith Coffee, Matthias Frank, David Fergenson, Eric Gard, Norman Madden, Vincent Riot, Abneesh Srivastava, Paul Steele, Herbert Tobias, Todd Weisgraber and Bruce Woods. In addition, funding for the project also came from the Nonproliferation, Arms Control and International Security (NAI) Directorate.

Detecting radiation to protect the nation

A team of Livermore researchers has developed the Adaptable Radiation Area Monitor (ARAM), which could play an important role in protecting the nation from radiological or nuclear attack.

Livermore shared its R&D 100 award with Innovative Survivability Technologies (IST) of Goleta, Calif., which licensed the technology in January 2004. IST rapidly transitioned the ARAM technology from the laboratory to production as an easy-to-operate system packaged for use in severe weather.

The ARAM detection system is unique among radiation detectors because of its ability to detect even small quantities of radioactive materials moving at either slow speeds or as fast as 60 miles per hour.

ARAM is a highly sensitive system that uses a thallium-doped sodium iodide crystal to detect small amounts of nuclear material in a number of different scenarios. It can be used as a fixed detector to monitor slow-moving packages, luggage or pedestrians; as a roadside detector to monitor high-speed traffic; or as a portable detector.

Before it was commercialized, ARAM was tested at LLNL and, more recently, it was used as a fixed device to monitor packages for Federal Express in its air cargo facility at the Denver International Airport.

Sponsored by NAI directorate, the ARAM team was composed of employees from the Chemistry and Materials Science, Computation and Engineering directorates. They included: Dan Archer, Brock Beauchamp, Joe Mauger, Mike Mercer, Karl Nelson, David Pletcher, Vincent Riot, Tom Schaffer (now retired), Jim Schek, Dave Trombino and Guy Urbina.

Joining materials in a new way

LLNL, Reactive NanoTechnologies of Hunt Valley, Md. and Johns Hopkins University shared an R&D 100 award for developing a heat source that enables lead-free soldering and brazing of materials at room temperature.

The nanoengineered heat source, dubbed NanoFoil®, heats only the interface being joined and permits large and small components to be metallically bonded with no thermal damage. NanoFoil® is sold by Reactive NanoTechnologies for different commercial applications.

Nearly every product, from computers to airplanes, requires a number of joining steps during manufacturing to form strong and durable metallic bonds that do not damage the materials being bonded.

NanoFoil® acts as a rapid and local heat source that replaces the furnaces and torches used in conventional soldering or brazing operations. By sandwiching NanoFoil® between two solder layers and the components to be joined, heat generated by a chemical reaction in the foil melts the solder and consequently bonds the components.

NanoFoil® is a new class of material and is a unique nanotechnology that was featured last year in the Strategic Plan for the National Nanotechnology Initiative, published by the Executive Office of the President's Office of Science and Technology Policy.

The development of NanoFoil® material was an outgrowth of the technology used to fabricate multilayer X-ray and extreme ultraviolet optics. The salient intellectual property for NanoFoil® was created in work on reactive nanolaminate materials initiated and performed in the laboratory of Troy Barbee Jr. in LLNL's Chemistry and Materials Science Directorate. He received his R&D 100 award for this work. Reactive NanoTechnologies has licensed nanolaminate technology from LLNL.

Seeing the big picture

For the second year in a row, Laboratory computer scientists have won an R&D 100 award for developing visualization software. This year's winner, called VisIt, is a visualization tool geared towards the parallel processing of large amounts of data, including simulations comprising trillions of bytes of data. Problems that require running for days or weeks on the world's most powerful supercomputers can be visualized and displayed within seconds using VisIt once the data is read.

To date, VisIt has been downloaded more than 25,000 times by users from throughout the world. This free, interactive parallel visualization and analysis tool operates on one-, two- and three-dimensional data to produce images, movies, and statistical reports. VisIt runs on a multitude of platforms, from Top500 machines like the Advanced Simulation Computing White to smaller parallel platforms using all types of Unix to desktop computers running Windows, Macintosh OS X, or Linux.

At the Laboratory, VisIt has been used to visualize complex physics simulation results including simulations of target capsules for the National Ignition Facility, Rayleigh-Taylor instability codes (where two liquids mix) and the dispersion of airborne chemical releases.

The development of VisIt was sponsored by the Advanced Simulation and Computing Program. The Computation directorate employees who developed VisIt included Eric Brugger, Sean Ahern, Kathleen Bonnell, Hank Childs, Linnea Cook, Jeremy Meredith, Mark Miller, and Brad Whitlock.

In addition to these four awards, another Lab employee — Henry Benner of the Chemistry and Materials Science Directorate — worked on a project at Lawrence Berkeley National Laboratory before he came to LLNL that won an R&D 100 award this year. That project is called "Ion Mobility Analysis for Rapid Identification of Cardiovascular Disease Indicators."

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